5 DOT LED LEVEL METER

The KIA6966S is designed for 5 LED level meter driver. Which is consist of one input amplifier and five comparators for LED level indication.

DIM	MILLIMETERS
A	22.48±0.2
B	3.2±0.2
D	1.2±0.25
d	0.5±0.1
G	1.95±0.2
H	7.7±0.3
L	3.2±0.3
P	2.54
T	0.25+0.1/-0.05

SIP-9

FEATURES

- · Low Spurious Noise Operation.
- · Constant Driving Current : Io=8mA(Typ.)
- · Indication Level Steps : 5dB, 5dB, 3dB, 3dB
- · Wide Operating Supply Voltage Range
  : Vcc=4～12V
- · Variable Input Amplifier Gain : Gv=0～20dB

MAXIMUM RATINGS (Ta=25℃)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Supply Voltage	V_{CC}	14	V
LED Driving Terminal Voltage (Note 1)	V_L	15	V
Power Dissipation (Note 2)	P_D	600	mW
Operating Temperature	T_{opr}	-25～75	℃
Storage Temperature	T_{stg}	-55～150	℃

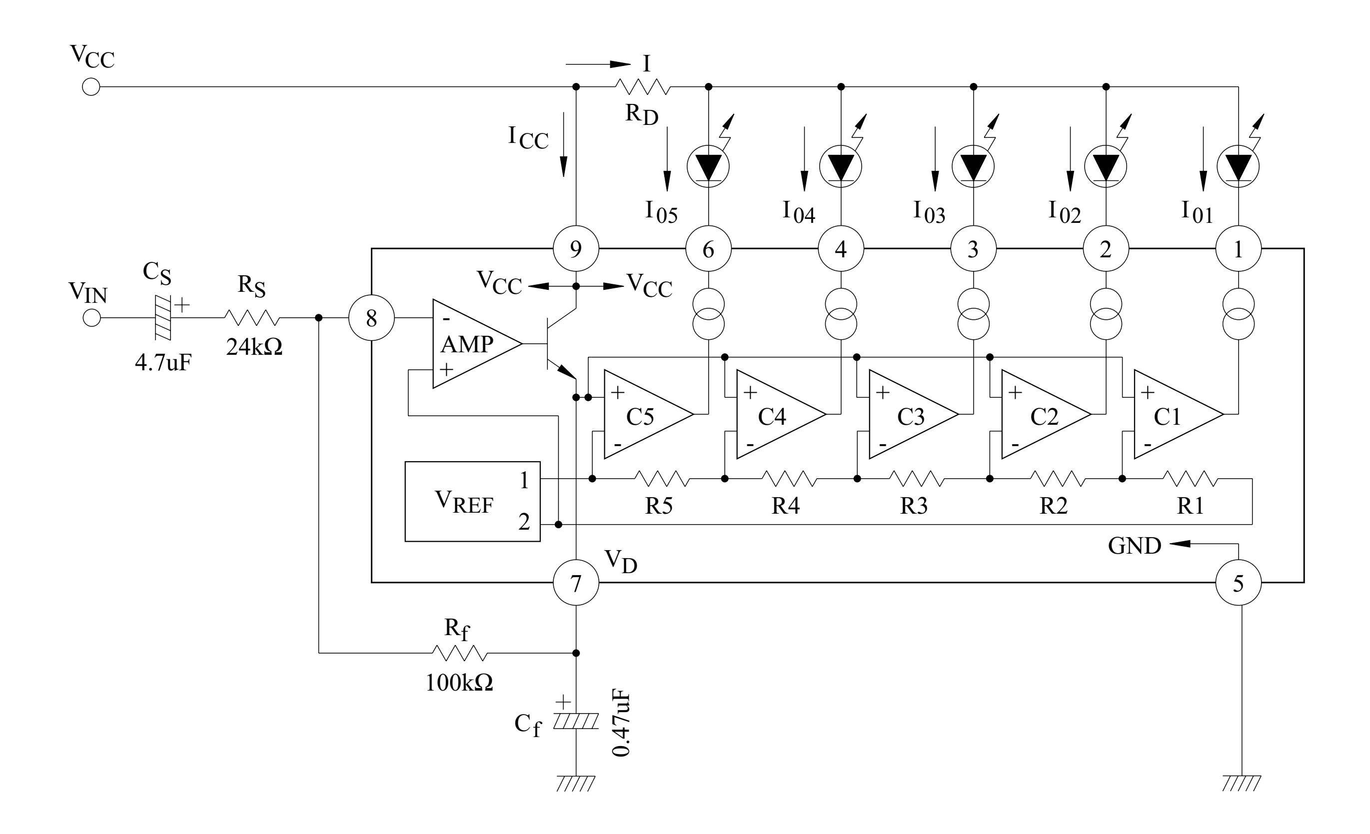
Note 1) For Pin①～④ and ⑥

Note 2) Derated above Ta=25℃ in the proportion of 4.8mW/℃ for KIA6966S.

ELECTRICAL CHARACTERISTICS (Unless otherwise specified, V_{CC}=9V, f=1kHz, Ta=25℃)

CHARACTERISTICS	SYMBOL	TEST CIRCUIT	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Quiescent Current	I_{CCQ}	-	V_{IN}=0V	-	3	5	mA
Output Current	Io (1～5)	-		5	8	10	mA
Output Leak Current	Io (OFF)	-		-	-	50	μA
Sensitivity	V_{LD5} (ON)	-	Rs=24kΩ, Rf=100kΩ	-	230	-	mV_{rms}
LED Turn-on Input Level	LD5	-	Rs=24kΩ, Rf=100kΩ Io=1mA	-1	0	1	dB
	LD4	-		-4	-3	-2	
	LD3	-		-7.5	-6	-4.5	
	LD2	-		-13	-11	-9	
	LD1	-		-19	-16	-13	

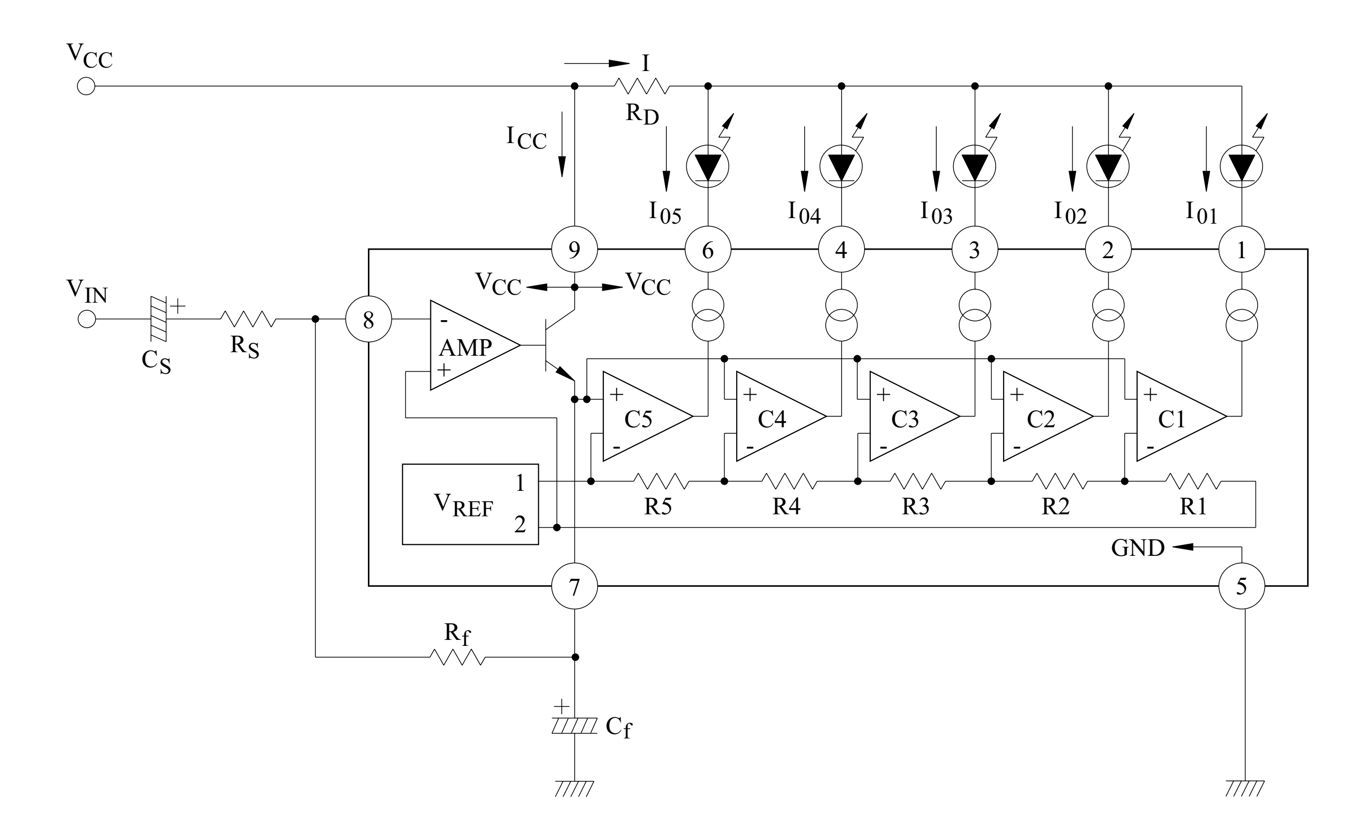
TEST CIRCUT / BLOCK DIAGRAM



INTERNAL RESISTANCE VALUE

	KIA6966S	UNIT
R1	1.36	kΩ
R2	1.08	kΩ
R3	1.89	kΩ
R4	1.78	kΩ
R5	2.50	kΩ

PRECAUTION FOR USE AND APPLICATION METHOD



1. Setting of Turn-on Level

Turn-on input level can be set through changing the voltage gain(G_V) of the input amplifier. This voltage gain is determined by the external resistor (Rs, Rf) and obtained by the equation below.

$$G_V = 20\log\frac{Rf}{Rs}$$ (use in the range of G_V=0～20dB)

When Gv=0dB (Rs=Rf=100kΩ), the turn-on level at fifth LED is 958.3mV_{rms}(Typ.) For turning on the fifth LED with the arbitrarily set input level (V_{IN}), use the following equation to set Rs and Rf.

$$\frac{Rf}{Rs} = \frac{958.3mV_{rms}}{V_{IN}}$$ (Use the resistor of Rf=56kΩ or over)

2. Setting of Power Dissipation and Limiting Resistor

Since the output of this IC is driver by constant current, all the output current ($Io_{1\sim5}$) are dissipated in the IC.
Therefore, set the limiting resistor (R_D) so that the power dissipation (P_D) may not exceed the maximum rating because of the ambient temperature.

$P_D = V_{CC} \cdot I_{CC} + (V_{CC} - R_D \cdot I - V_F)\, Io_1 + \cdots\cdots + (V_{CC} - R_D \cdot I - V_F)\, Io_5$

Total output current : $I = Io_1 + Io_2 + Io_3 + Io_4 + Io_5$

LED forward voltage : V_F=1.5V